

Atty. Dkt. No. 02CR350/KE

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) An interference-aided signal acquisition and tracking system comprising:

a vehicle having at least two receivers configured to detect external signals, the at least two receivers having an output dependent on attitude of the vehicle;

an interference detector that measures the output of at least one of the at least two receivers, wherein the interference detector comprises a rotation tracker that provides a rotation estimate;

a noise canceller that combines the output of the at least two receivers, wherein the noise canceller comprises an interference cancellation controller that applies modulations to null an interference signal as a function of the rotation estimate; and

a signal processor that extracts a desired signal from the output of the noise canceller, wherein the output of the interference detector is used to control the noise canceller as to reject unwanted signals and enhance performance of the signal processor in extracting the desired signal.

2. (Original) The system of claim 1, wherein the vehicle is a missile.

3. (Cancelled)

4. (Cancelled)

5. (Original) The system of claim 1, further comprising phase modulators.

6. (Original) The system of claim 1, wherein the interference detector comprises an analog intensity detector.

7. (Original) The system of claim 1, wherein the interference detector and noise canceller are embodied in programmed instructions in a rotation preprocessor.

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8. (Original) The system of claim 1, wherein the noise canceller modulates to null interference in the detected external signals.

9. (Currently Amended) A method of signal acquisition and tracking comprising:
receiving external signals at a spinning vehicle;
measuring the received external signals;
providing a rotation estimate of the rotation of the spinning vehicle;
modulating the received external signals to null an interference signal; and
extracting a desired signal from the combined external signals.

10. (Cancelled)

11. (Original) The method of claim 9, wherein modulating the received signals to null an interference signal comprises combining the measured external signals and rejecting unwanted signals.

12. (Original) The method of claim 9, further comprising correcting phase of an output signal from the modulation for rotation effects.

13. (Original) The method of claim 9, wherein modulating the received external signals is performed on a pre-satellite basis using satellite geometry information.

14. (Original) A signal acquisition and tracking system where interference is cancelled for jamming immunity with spinning vehicles operating in interference environments, the system comprising:

a number of signal receivers associated with a spinning vehicle;

a rotation tracker that obtains signals from the number of signal receivers and provides a rotation estimate;

a global positioning system (GPS) processor that provides satellite geometry information;
and

an interference cancellation controller that obtains the rotation estimate and the satellite geometry information and modulates to null interference received by the number of signal receivers.

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15. (Original) The system of claim 14, wherein the signal receivers are antennas on a missile.
16. (Original) The system of claim 14, wherein the modulation done by the interference cancellation controller is done on a per-region-of-sky basis.
17. (Original) The system of claim 14, wherein the modulation done by the interference cancellation controller is done on a per-satellite basis.
18. (Original) The system of claim 14, wherein the interference cancellation controller corrects the phase of the signals from the number of signal receivers for rotation effects.
19. (Original) The system of claim 14, wherein the interference cancellation controller predetermines modulation commands as functions of roll and pitch angles.
20. (Original) The system of claim 14, wherein the rotation tracker and interference cancellation controller are implemented by an application specific integrated circuit (ASIC).